Pet Shelter Management Application

Project Description

Our project is a pet shelter management application. The project allows users to efficiently manage all areas of a pet shelter, including the adoption and care of animals, appointments, staff management, social media, event planning, and inventory management. This application utilizes the Oracle database management system to manage relationships between animals, adopters, employees and volunteers and facilitate a smooth and efficient adoption experience for everyone involved.

In the implementation, the app allows users to add, remove and update animals in the database. Our team's user-friendly interface simplifies adding new entries, removing outdated information, and updating existing details, ensuring the database remains accurate and comprehensive. The application provides valuable search capabilities, enabling users to locate a particular caretaker using criteria such as name, ID, or address. Additionally, users can identify all customers who have contributed donations surpassing a specified amount and determine the current count of animals belonging to a specific type within the pet shelter.

Schema Differences

We have had to make some changes to the schema and SQL table creations and insertions once we began implementing our project. We have had to combine each date and time attribute within the same relation since Oracle does not have distinct types for them, so it didn't make sense to keep them separated. We also changed the constraint syntax since we were getting errors when we wrote the create table statements as we were taught in class. Additionally, we were missing many ON DELETE CASCADE clauses.

- Every instance of VARCHAR changed to VARCHAR2() with a specified character limit as appropriate.
- Every relation with an ID attribute is now GENERATED ALWAYS AS IDENTITY.
- eventDayTime as a single attribute in FundraiserEvent as opposed to eventDate in Fundraiser and another relation FundraiserEventDate with eventDate and eventTime.
 eventDayTime is UNIQUE.
- vetDayTime as a single attribute in VetAppointment as opposed to vetDate and vetTime.
 vetDayTime now is the only attribute in the primary key.
- Adopter references Customer, added ON DELETE CASCADE.
- Animal now has arrivalDate instead of timeInShelter as it didn't make sense to have to regularly update every animal record. arrivalDate is NOT NULL.
- VetAppointment references Animal, added ON DELETE CASCADE.

- Worker references AnimalCaretaker, added ON DELETE CASCADE.
- Volunteer references AnimalCaretaker, added ON DELETE CASCADE.
- In Post added postingDate NOT NULL.
- AdoptionDetails references petID, added ON DELETE CASCADE.
- PetAdopter references Animal, added ON DELETE CASCADE.
- Appointment references Animal, added ON DELETE CASCADE.
- Appointment references Customer, added ON DELETE CASCADE.
- Animal previousOwner changed to NOT NULL.

Final Schema + Data Present

FundraiserEvent(eventID, eventType, eventDayTime, donationGoal);

AnimalCaretaker(<u>caretakerID</u>, caretakerName, **fundEventID**, caretakerAddress, caretakerPostalCode);

Customer(<u>customerID</u>, customerName);

Adopter(adopterID, numOfAdoptions, safeOwnerRating, adopterPostalCode, adopterAddress);

Animal(<u>petID</u>, animalName, type, age, favouriteCaretaker, previousOwner, arrivalDate, adopterID);

VetAppointment(vetDayTime, vetLicenselD, petID);

Worker(workerID, hourlyPay);

Volunteer(volunteerID, hoursVolunteered);

Post(<u>postID</u>, postType, description, postingDate, **caretakerID**);

AdoptionDetails(<u>adoptionID</u>, **petID**, **adopterID**, **caretakerID**, adoptionDate, notes);

PetAdopter(petID, adopterID);

Appointment(petID, caretakerID, customerID, apptDayTime);

Donation(customerID, caretakerID, amount);

Item(itemID, itemName, quantity);

ItemPurchase(<u>customerID</u>, <u>caretakerID</u>, <u>itemID</u>);

Vet(vetLicenseID, vetName);

AnimalCaretakerPC(<u>caretakerPostalCode</u>, caretakerCity);

PostDateAndType(postingDate, postType);

AdopterPC(<u>adopterPostalCode</u>, adopterCity); ItemPrice(<u>itemID</u>,

total);

FundraiserEvent

QL> select * from fundraiserevent;		
EVENTID EVENTTYPE	EVENTDAYT DON	ATIONGOAL
1 Charity Auction		 5000
2 Pet Walkathon	15-NOV-23	3000
3 Adoption Fair	30-NOV-23	2000
4 Pet Costume Contest	10-DEC-23	2500
5 Animal Rescue Gala	25-DEC-23	7000

AnimalCaretaker

CARETAKERID CARETAKERNAME	FUNDEVENTID CARETAKERADDRESS	CARETAKE
1 John Peters	1 123 Main St	12345
2 Mary Johnson	2 456 Elm St	67890
3 David Perks	3 789 Oak St	34567
4 Elaine Brown	4 101 Pine St	87654
5 Michael Wilson	5 234 Maple St	43210
6 Emily Anderson	123 Oak Lane	12345
7 Chris Martinez	789 Pine St	43210
8 Jasmine Walker	101 Maple St	34567
9 Ryan Turner	201 Cedar Drive	43210
10 Morgan Foster	234 Birch Blvd	67890

Customer

CUSTOMERID	CUSTOMERNAME
1	Alice Johnson
2	Bob Smith
3	Carol Davis
4	David Wilson
5	Eve Brown

Adopter

Animal

PETID ANIMALNAME	TYPE	AGE	FAVOURITECARETAKER	PREVIOUSOWNER ARRIVALDA	ADOPTERI
1 Fluffy	Cat	2	3	4 01-NOV-23	
2 Rex	Dog	3	1	4 11-MAR-23	
3 Whiskers	Cat	5	2	5 02-JAN-22	
4 Buddy	Bunny	4	4	3 14-OCT-20	
5 Luna	Dog	1	3	1 06-JUN-23	
6 Domino	Hamster	1	3	1 23-FEB-22	
7 Patch	Dog	2	5	4 07-APR-23	
8 Pirate	Cat	2	4	4 11-MAY-21	
9 Cloudy	Bunny	3	2	2 11-NOV-23	
10 Smoothie	Bunny	3	2	2 31-OCT-23	

VetAppointment

Worker

[SQL> select	* from worker;
WORKERID	HOURLYPAY
1	 15
2	17
3	14
4	18
5	16

Volunteer

* from volunteer;
HOURSVOLUNTEERED
20
25
18
30
22

Post

[SQL> select * from post;			
POSTID POSTTYPE	DESCRIPTION	POSTINGDA	CARETAKERID
1 Announcement	Adoption event this weekend!	25-0CT-23	1
2 News	New arrivals in the shelter	26-0CT-23	2
3 Update	Vet check-ups for all animals	27-0CT-23	3
4 Event	Volunteer appreciation day	28-0CT-23	3
5 Adoption	Adopt a furry friend today	29-0CT-23	1

AdoptionDetails

AdoptionDetail				
[SQL> select	* from add	ptiondetail	ls;	
ADOPTIONID		ADOPTERID	CARETAKERID	ADOPTIOND
NOTES				
1 friendly cat	1			20-0CT-23
2 playful dog	2	2	2	21-0CT-23
3 loud cat	3	3	3	22-0CT-23
ADOPTIONID		ADOPTERID	CARETAKERID	ADOPTIOND
NOTES				
4 really soft	4	4		23-0CT-23
5 quiet dog	5	5	5	24-0CT-23
6 interesting	6 hamster	5	2	25-0CT-23

PetAdopter

[SQL>	select	* from petadopter;	
	PETID	ADOPTERID	
	1	1	
	2	2	
	3	3	
	4	4	
	5	5	
	6	5	

Appointment

[SQL> select	t * from appo	ointment;	
PETID	CARETAKERID	CUSTOMERID	APPTDAYTI
6	2	1	15-JAN-23
7	2	2	20-FEB-23
8	3	3	10-MAR-23
9	4	4	07-APR-23
10	5	5	12-MAY-23

Donation

SQL> select *	from donati	.on;
CUSTOMERID CAR	ETAKERID	AMOUNT
1	1	100
2	2	150
3	3	200
4	4	50
5	5	75

Item

ITEMID	ITEMNAME	QUANTITY
1	Pet Food	100
2	Blankets	50
3	Toys	75
4	Medicine	25
5	Leashes	30

ItemPurchase

[SQL> select * fr	om itempu	rchase;	
CUSTOMERID CARET	AKERID	ITEMID	
1	1	3	
2	1	5	
3	3	1	
4	5	4	
5	3	5	

Vet

AnimalCaretakerPC

PostDateAndType

AdopterPC

ItemPrice

[SQL> select *	from itemprice	;
ITEMID	TOTAL	
5	200	
2	100	
1	150	
4	75	
3	90	

SQL Queries + Locations

INSERT

GUI location: intake_and_adoption.php lines 22 to 75

Query Location: database and queries.php lines 132 to 212

DELETE

GUI location: intake and adoption.php lines 77 to 82

Query Location: database_and_queries.php lines 214 to 241

UPDATE

GUI location: intake_and_adoption.php lines 84 to 94

Query Location: database_and_queries.php lines 243 to 310

Selection

GUI location: seek.php lines 17 to 27

Query Location: database_and_queries.php lines 382 to 450

Projection

GUI location: search.php lines 17 to 29

Query Location: database_and_queries.php lines 500 to 560

Join

GUI location: seek.php lines 29 to 34

Query Location: database_and_queries.php lines 464 to 498

Aggregation with Group By

GUI location: search.php lines 30 to 37

Query Location: database_and_queries.php lines 563 to 593

Aggregation with Having

GUI location: explore.php lines 17 to 22

Query Location: database_and_queries.php lines 595 to 628

Nested Aggregation with Group By

GUI location: explore.php lines 24 to 28

Query Location: database_and_queries.php lines 630 to 660

Division

GUI location: explore.php lines 30 to 34

Query Location: database_and_queries.php lines 663 to 688

Query Screenshots

INSERT

Table from sqlplus before query:

ETID ANIMALNAM	E TYPE	AGE	FAVOURITECARETAKER	PREVIOUSOWNER	ARRIVALDA	ADOPTERID
 1 Fluffy		2	3	4	01-NOV-23	1
2 Rex	Dog	3	1	4	11-MAR-23	2
3 Whiskers	Cat	5	2	5	02-JAN-22	3
4 Buddy	Bunny	4	4	3	14-0CT-20	4
5 Luna	Dog	1	3	1	06-JUN-23	5
6 Domino	Hamster	1	3	1	23-FEB-22	
7 Patch	Dog	2	5	4	07-APR-23	
8 Pirate	Cat	2	4	4	11-MAY-21	
9 Cloudy	Bunny	3	2		11-NOV-23	
10 Smoothie	Bunny	3	2		31-0CT-23	

Gui for the insert query:

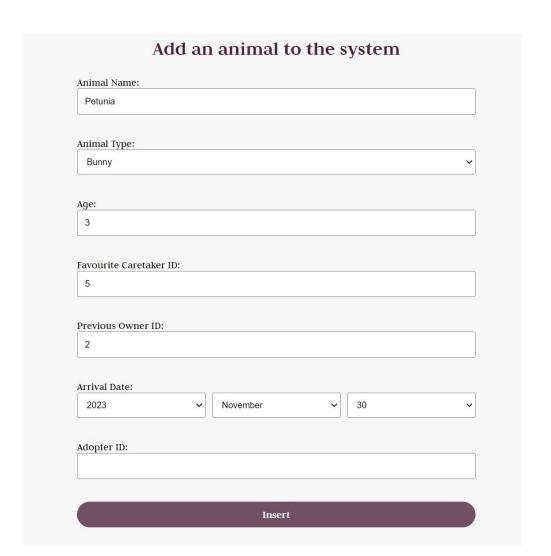


Table after the query is executed:

Animal Table

Pet ID	Animal Name	Animal Type	Animal Age	Favourite Caretaker ID	Previous Owner	Arrival Date	Adopter ID
11	Petunia	bunny	3	5	2	30-NOV-23	
1	Fluffy	Cat	2	3	4	01-NOV-23	1
2	Rex	Dog	3	1	4	11-MAR-23	2
3	Whiskers	Cat	5	2	5	02-JAN-22	3
4	Buddy	Bunny	4	4	3	14-OCT-20	4
5	Luna	Dog	1	3	1	06-JUN-23	5
6	Domino	Hamster	1	3	1	23-FEB-22	
7	Patch	Dog	2	5	4	07-APR-23	
8	Pirate	Cat	2	4	4	11-MAY-21	
9	Cloudy	Bunny	3	2		11-NOV-23	
10	Smoothie	Bunny	3	2		31-OCT-23	

DELETE

Table from sqlplus before delete query is executed:

ETID ANIMALNAME	TYPE	AGE	FAVOURITECARETAKER	PREVIOUSOWNER	ARRIVALDA	ADOPTERIO
 1 Fluffy	 Cat	 2	3	4	01-NOV-23	1
2 Rex	Dog	3	1	4	11-MAR-23	
3 Whiskers	Cat	5	2	5	02-JAN-22	
4 Buddy	Bunny	4	4	3	14-0CT-20	
5 Luna	Dog	1	3	1	06-JUN-23	į
6 Domino	Hamster	1	3	1	23-FEB-22	
7 Patch	Dog	2	5	4	07-APR-23	
8 Pirate	Cat	2	4	4	11-MAY-21	
9 Cloudy	Bunny	3	2		11-NOV-23	
10 Smoothie	Bunny	3	2		31-0CT-23	

Delete query in the GUI:



Table after the delete query is executed:

Animal Table

Pet ID	Animal Name	Animal Type	Animal Age	Favourite Caretaker ID	Previous Owner	Arrival Date	Adopter ID
1	Fluffy	Cat	2	3	4	01-NOV-23	1
2	Rex	Dog	3	1	4	11-MAR-23	2
3	Whiskers	Cat	5	2	5	02-JAN-22	3
4	Buddy	Bunny	4	4	3	14-OCT-20	4
5	Luna	Dog	1	3	1	06-JUN-23	5
7	Patch	Dog	2	5	4	07-APR-23	
8	Pirate	Cat	2	4	4	11-MAY-21	
9	Cloudy	Bunny	3	2		11-NOV-23	
10	Smoothie	Bunny	3	2		31-OCT-23	

UPDATE

Table from sqlplus before update query is executed:

TID ANIMALNAME	TYPE	AGE	FAVOURITECARETAKER	PREVIOUSOWNER	ARRIVALDA	ADOPTERI
1 Fluffy	 Cat	2	3	4	01-NOV-23	
2 Rex	Dog	3	1	4	11-MAR-23	
3 Whiskers	Cat	5	2	5	02-JAN-22	
4 Buddy	Bunny	4	4	3	14-0CT-20	
5 Luna	Dog	1	3	1	06-JUN-23	
6 Domino	Hamster	1	3	1	23-FEB-22	
7 Patch	Dog	2	5	4	07-APR-23	
8 Pirate	Cat	2	4	4	11-MAY-21	
9 Cloudy	Bunny	3	2		11-NOV-23	
10 Smoothie	Bunny	3	2		31-0CT-23	

Update query in the GUI:

ie values are case sensin	e and if you enter in the wrong	case, the update statement will not do any
Pet ID:		
1		
Age:		
18		
Favourite Caretaker	D:	
5		
Adopter ID:		
4		

Table after the update query is executed:

Animal Table

Pet ID	Animal Name	Animal Type	Animal Age	Favourite Caretaker ID	Previous Owner	Arrival Date	Adopter ID
1	Fluffy	Cat	18	5	4	01-NOV-23	4
2	Rex	Dog	3	1	4	11-MAR-23	2
3	Whiskers	Cat	5	2	5	02-JAN-22	3
4	Buddy	Bunny	4	4	3	14-OCT-20	4
5	Luna	Dog	1	3	1	06-JUN-23	5
6	Domino	Hamster	1	3	1	23-FEB-22	
7	Patch	Dog	2	5	4	07-APR-23	
8	Pirate	Cat	2	4	4	11-MAY-21	
9	Cloudy	Bunny	3	2		11-NOV-23	
10	Smoothie	Bunny	3	2		31-OCT-23	

Selection

Table from sqlplus before the selection query is executed:

RETAKERID	CARETAKERNAME I	FUNDEVENTID	CARETAKERADDRESS	CARETAKE
1	John Peters	1	123 Main St	12345
2	Mary Johnson	2	456 Elm St	67890
3	David Perks	3	789 Oak St	34567
4	Elaine Brown	4	101 Pine St	87654
5	Michael Wilson	5	234 Maple St	43210
6	Emily Anderson		123 Oak Lane	12345
7	Chris Martinez		789 Pine St	43210
8	Jasmine Walker		101 Maple St	34567
9	Ryan Turner		201 Cedar Drive	43210
10	Morgan Foster		234 Birch Blvd	67890

Selection query in the GUI:



Results from the query:

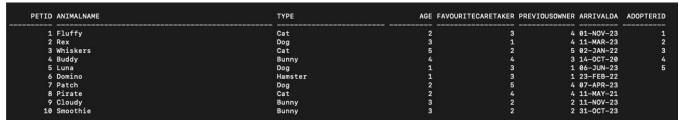
Operation successful

Search Results

Caretaker	Caretaker	Fundraiser	Address	Postal
ID	Name	ID		Code
1	John Peters	1	123 Main St	12345

Projection

Table from sqlplus before the projection query is executed:



Projection query in the GUI:

PROJECTION: Choose which attributes you would like to see from Animals table



Results of the projection query:

Search Results

petID	animalName	type	arrivalDate
1	Fluffy	Cat	01-NOV-23
2	Rex	Dog	11-MAR-23
3	Whiskers	Cat	02-JAN-22
4	Buddy	Bunny	14-OCT-20
5	Luna	Dog	06-JUN-23
6	Domino	Hamster	23-FEB-22
7	Patch	Dog	07-APR-23
8	Pirate	Cat	11-MAY-21
9	Cloudy	Bunny	11-NOV-23
10	Smoothie	Bunny	31-OCT-23

Join

Tables from sqlplus before the join query is executed:

```
SQL> SELECT * FROM CUSTOMER;

CUSTOMERID CUSTOMERNAME

1 Alice Johnson
2 Bob Smith
3 Carol Davis
4 David Wilson
5 Eve Brown
```

SQL> SELECT	* FROM DONA	ATION;
CUSTOMERID	CARETAKERID	AMOUNT
1	1	100
2	2	150
3	3	200
4	4	50
5	5	75

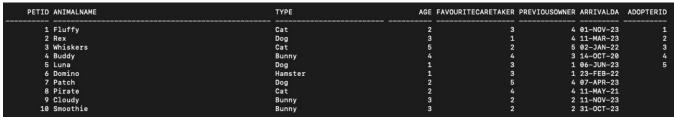
Join query in the GUI:





Aggregation with Group By

Table from sqlplus before the group by query is executed:



Aggregation with group by query in the GUI:

Aggregation with GROUP BY: Count how many animals of specific type we have in pet shelter The values are case sensitive and if you enter in the wrong case, the group by query will not be correctly executed. Reminder: Animal type first letter should be capitalized. Type of animal: Cat Submit

Results of the query:

Operation successful

Search Results

Animal Type	TypeCount		
Cat	3		

Aggregation with Having

Table in sqlplus before the having query is executed:

EVENTDAYT	DONATIONGOAL
01-NOV-23	5000
15-NOV-23	3000
30-NOV-23	2000
10-DEC-23	2500
25-DEC-23	7000
	01-NOV-23 15-NOV-23 30-NOV-23 10-DEC-23

Aggregation with having query in the GUI:

Aggregation with HAVING: Find fundraiser event types with specified average donation goal or above



Results of the query:

Operation successful

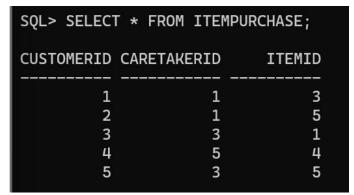
Search Results

Event Type	Average Donation Amount
Pet Walkathon	3000
Charity Auction	5000
Animal Rescue Gala	7000

Nested Aggregation with Group By

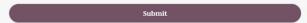
Tables before the nested aggregation with group by query is executed:





Nested aggregation with group by query in the GUI:

Nested Aggregation with GROUP BY: Find all customers who have purchased equal to or greater than the average number of items



Results of the query:

Operation successful

Search Results

Customer ID	Customer Name	Number of items purchased	
3	Carol Davis	2	
2	Bob Smith	2	
4	David Wilson	2	
1	Alice Johnson	2	

Division

Tables before the division query is executed:

PETID A	ANIMALNAME	TYPE	AGE	FAVOURITECARETAKER	PREVIOUSOWNER ARRIVALDA	ADOPTERI
1 1	 Fluffy	Cat	2	3	4 01-NOV-23	
2 F	Rex	Dog	3	1	4 11-MAR-23	
3 V	Whiskers	Cat	5	2	5 02-JAN-22	
4 E	Buddy	Bunny	4	4	3 14-OCT-20	
5 l	Luna	Dog	1	3	1 06-JUN-23	
6 [Domino	Hamster	1	3	1 23-FEB-22	
7 F	Patch	Dog	2	5	4 07-APR-23	
8 F	Pirate	Cat	2	4	4 11-MAY-21	
9 (Cloudy	Bunny	3	2	2 11-NOV-23	
10 5	Smoothie	Bunny	3	2	2 31-OCT-23	

SQL> SELECT * FROM ANIM	ALCARETAKER;		
CARETAKERID CARETAKERNA	ME FUNDEVENTID	CARETAKERADDRESS	CARETAKE
1 John Peters 2 Mary Johnso 3 David Perks 4 Elaine Brow 5 Michael Wil 6 Emily Ander 7 Chris Marti 8 Jasmine Wal 9 Ryan Turner	n 2 3 n 4 son 5 son nez ker	123 Main St 456 Elm St 789 Oak St 101 Pine St 234 Maple St 123 Oak Lane 789 Pine St 101 Maple St 201 Cedar Drive 234 Birch Blvd	12345 67890 34567 87654 43210 12345 43210 34567 43210 67890
10 rows selected.	E1	234 Bilen Beva	67636

SQL> SELECT * FROM ADOPTIONDETAILS;					
ADOPTIONID	PETID	ADOPTERID	CARETAKERID	ADOPTIOND	NOTES
		1		20 OCT 22	friendly ort
1	7	1			friendly cat
2	2				playful dog
3	3	3	3	22-0CT-23	loud cat
4	4	4	2	23-0CT-23	really soft bunny
5	5	5	5	24-0CT-23	quiet dog
6	6	5	2	25-0CT-23	interesting hamster
					-
6 rows sele	ected.				

Division query in the GUI & the result of the query:

